

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

Negative Declaration of Environmental Effects of Leith Creek Scotland County, N. C., Flood Control Project

Introduction

1977

APR O 4 pps

The Leith Creek Watershed is located in Scotland County in the coastal plains section of North Carolina. The watershed consists of a total area of 13.24 square miles above its confluence with Little Creek southeast of the City of Laurinburg. The Leith Creek flood plain passes through the northeast portion of the City of Laurinburg and forms the boundary between Laurinburg and East Laurinburg in its lower reach. The revised project area is limited to that 1.97 mile portion of Leith Creek between Gill Street and the L & S Railroad just above State Road 1645 (Fertilizer Plant Road). Development within the flood plain of the study reach generally consists of low-cost housing and several small commercial concerns. An estimated \$26,550 in damages occur annually in the study area. Problems of lesser importance are health problems due to septic tank overflow and standing water at flood stage; collection of trash, debris, sediment and large discarded articles in the creek bed; and safety problems due to flooding.

Existing Environmental Setting

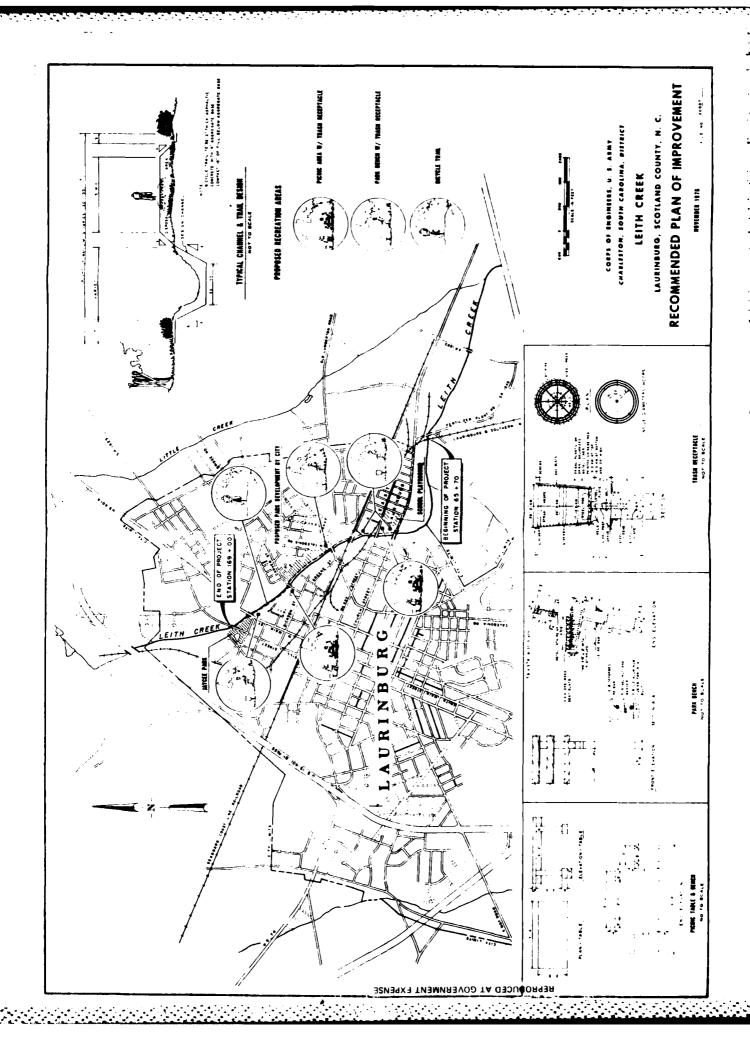
The part of Leith Creek originally under consideration for flood control measures extends 3.23 miles from US 74 Bypass to US 15-401 Bypass. The lower portion of this original study area from US 74 Bypass to the L & S Railroad just above State Road 1645 is wooded swamp characterized by backwater, poorly defined channels and lush vegetation.

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This low area provides excellent habitat for waterfowl, reptiles, amphibians and mammals common to swamps. Cypress and black gum are the dominant tree types. Redbreast sunfish, redfin pickerel and largemouth bass are reported, in spite of residual pollution from Laurinburg. Wood ducks, woodcock, hawks, owls and various songbirds are seasonally present.

better defined channel. Tree types change from cypress and black gum to less water tolerant species of sweet gum, sycamore, tulip poplar and a few pines. Black willow, privet, smilax and various shrubs and grasses grow to the water's edge and extend well over the creek. Aquatic vegetation is established on much of the creek's bottom. From E. Church Street to Gill Street, the change to better drained soils and a more sharply defined channel continues. Wildlife in this urban reach is limited to a narrow strip of habitat which is marginal to moderate in value. Trash on the channel bottom, floating debris and scum trapped by clogging vegetation, and trash along the side make the stream aesthetically unpleasing for much of this reach. Sewage and other effluent discharges further degrade water quality.

Above Gill Street more pines appear along with sweet gum, sycamore, tulip poplar and some oak. Land adjacent to the creek is more characteristic of forests, numerous trees having diameters of 24 inches or greater. Habitat is suitable for beaver, squirrels, rabbits, raccoons and other small mammals. The area provides habitat for wood



ducks, woodcock, songbirds and screech owls. Fishery habitat supports darters, daces and possibly a few sunfish, but average stream width its about 8 feet, and creek volume is small.

The reaches above Gill Street and below the L & S Railroad of CP.

1645 have the greatest environmental value but have the smallest potential for flood damages. The proposed plan and alternatives have been modified so that both of these segments are deleted.

Proposed Action

The most appropriate plan of improvement in the Leith Crock Barin is a combination structural and nonstructural plan. The structural measures consist of cleaning and widening the existing channel for a total distance of 1.97 miles, replacing two highway bridges and relocating two water mains and one sewer line. Nonstructural measures consist of passage, by the local sponsor, of regulatory measures to control the residual flood plain. The concept of designated floodways is recommended. Recreational facilities in the form of a linear greenes way with bike trail and picnic tables are also included as part of the recommended plan are to follows:

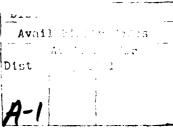
widen and deepen the existing channel a total distance of 1...

miles. Bottom widths vary from 35 feet in the reach between 1...

Laurinburg and Southern Railroad (Station 65+70) and N. 1...

Street (Station 162+60) to 30 feet between N. Main Street ...





the end of the project at Gill Street (Station 169+00). Channel side slopes are designated as 2 horizontal on 1 vertical.

Bottom slopes range from .0015 ft/ft to .00086 ft/ft.

Remove and replace the existing McKay Street Bridge. Replacement structure will have a minimum low member elevation of 196.4 feet ms1 and sufficient opening to pass a flow of 1640 cfs with a head loss of no more than 0.2 feet.

Remove and replace the existing Carver Street Bridge. Replacement structure will have a low member elevation of 201.0 feet msl and have sufficient opening to pass a flow of 1570 cfs with a head loss of no more than 0.2 feet.

Relocate the following utility crossings:

- 8 inch water main near McKay Street
- 8 inch sewer main near Caledonia Road
- 6 inch water main near Carver Street

Acquisition of 20.72 acres of permanent right-of-way will be required to implement the proposed plan.

Local sponsor is required to adopt and enforce land use measures to prevent the unwise and uneconomical development of the flood plain. The recommended plan would compliment plans by the City of Laurinburg to construct a park on the western bank between Carver Street and Caledonia Road. Clearing, grading and seeding

would be done such that the project area could be maintained as a greenway from Gill Street to Church Street. Landscaping with ornamental shrubbery, an asphalt bike and walking trail, picnic tables, benches and possibly simple playground items would be provided on a 50-50 cost sharing basis with Scotland County. (See Plate 1)

Probable Impact of the Proposed Plan

The proposed plan would result in \$9,350 net average annual flood control benefits and would alleviate 88 percent of the tangible 50-year flood damage. The plan would remove most of the health hazard due to septic tank overflow into standing water during periods of flooding. Cleaning of the creek bottom would result in the removal of trash, debris and large discarded articles. Cleaning and widening would result in the removal of vegetation which, in places, clogs the channel and collects floating debris and scum. A greenway with paths and land-scaping would improve the appearance of the area and provide recreation in a low income portion of the city. Continued maintenance by the local sponsor would provide long-term improvement.

Adverse effects of the proposed plan include the annual expense of \$13,900 to achieve the \$23,250 in flood control benefits, the destruction of existing bottom flora and invertebrates, loss of vegetation from one side of the creek, and a temporary increase in turbidity and sediment load. The plan could also drain some saturated soils immediately adjacent to the creek.

Right-of-way clearing for the plan would result in the selective clearing of 19.5 acres of vegetation. The cover lost would include shrubs and thickets (black willow, privet, honeysuckle and smilax) and some trees (sweet gum, sycamore, black gum, a few pines and small oaks). Work on the channel requiring heavy equipment adjacent to the stream will be done from one side only, and trees on the stream's opposite side will be left for cover. Where possible and where compatible with plans for a greenway, selected trees will be left on both sides. The project area is a narrow strip which is impinged upon from both sides by residential and commercial development, and provides only marginal to moderate habitat for birds, squirrels, rabbits and other small animals. Studies by the North Carolina Wildlife Resources Commission show that the amount of stream cover is the greatest single factor affecting fish populations in streams disturbed by flood control measures. Fish resources in the project area are limited to darters, daces, a few sunfish of minimal size, and possibly small pickerel or small largemouth bass at the lower project limit. Since the proposed plan derives its flood control by widening and deepening of the channel, cover could be reestablished along the edges of the creek without affecting flow.

Existing flora and invertebrates from the existing predominantly sand and silt bottom will be removed, as with all four channel modification plans. The sand and silt bottom should gradually be recolonized from the undisturbed creek bottom above the project.

Erosion, turbidity and sedimentation will be increased during and after construction until vegetation is reestablished. Seeding with grass will be done on all cleared areas. The proposed plan requires 34,700 cubic yards of excavation and 19.5 acres of selective clearing. A small increase in sediment load may occur during periods of high discharge due to increased velocities as a result of confinement of waters to the stream channel. Immediately below the lower project limit the creek slows and widens to form a broad swamp with no defined channel. This area acts as a filter. On days of high volume flow and turbidity in the upper reaches of Leith Creek, clear water can be observed in this lower swampy area. Accumulation of sediment takes place in this lower area under present conditions, but does not appear to affect aquatic plant vigor or fish and wildlife habitat.

The proposed plan calls for deepening to as much as 2 feet along portions of the project to tie in with the bottoms of existing culverts. In the existing channel, excavation would amount to little more than removal of recently deposited sediment and silt. Widening of the channel would result in excavation to this same level, approximately the natural elevation of the creek bottom. Fill material will be placed such that drainage into the creek will not be blocked. Culverts will be provided where necessary. Elevated fill areas and a larger channel could result in better drained soils and fewer lowland hardwoods in the reestablished cover of a very narrow strip immediately adjacent to the creek.

The proposed plan, like all of the structural alternatives, could be made compatible with the plans by the City of Laurinburg to construct

a park on the western bank between Carver Street and Caledonia Road. The proposed plan includes the establishment and maintenance of a green-way along a large partion of the project. Aesthetic and recreational benefits from this greenway would be gained through a 50-50 cost sharing agreement with Scotland County only for the additional cost above normal clearing, grading and seeding for flood control and erosion control.

Alternatives to the Proposed Action

Description of alternative plans and their impacts are contained in Tables 1 and 2. Plans 1-4 are varied channel modification solutions. Plan 5 attempts flood control by permanent removal of adjacent vegetation rather than changing channel dimensions. Plan 6, the non-structural alternative, cannot be economically justified. Plan 3 requires the least Federal and non-Federal costs of the alternatives considered, and alleviates 88% of the total flood damages. Plan 3 provides the greatest net benefits (excess benefits over costs) and has the best benefit/cost ratio. Plan 3 was selected as the National Economic Development (NED) Plan.

Because of the large amount of trash, debris and sediment in the creek, some plan to clean out the bottom for aesthetic, water quality and flood control improvement seems called for. Plan 3 accomplishes this with less disturbance than the other channel modification plans because of less excavation, clearing and shaping. With selective clearing procedures and plans to maintain the area as a greenway, Plan 3 was also selected as the Environmental Quality (EQ) Plan.

Table 1

COMPARISON OF ALTERNATIVE PLANS

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adjerse impacts flumited to pro- ject sosts in grmediate area)	\$17,000 Fed.Avg.Annual Cost \$20,000 Fed.Avg.Annual Cost 4, 00 Son-Fed.Avg.Ann.Cost 1,400 Son-Fed.Avg.Ann.Cost 1,400 Son-Fed.Ann.Annual 1,500 Son-Fed.Ann.Annual 1,500 Fed.Avg.Annual 2,500 Fed.Avg.Annual 3,500 Fed.Avg.Annual 3,500 Fed.Avg.Avg.Avg.Avg.Avg.Avg.Avg.Avg.Avg.Avg	<u>.</u>	\$1,900 Fed-Ang-Ammad Gost 59,300 Fed-Ang-Ammud Cost Sep-400 Fed-Ang-Ammad Cost 4,500 Non-Fed-Ang-Ammad Cost 1,500 Non-Fed-Ang-Amm Cost 1,500 Non-Fed-Ang-Ammad Cost 1,500 Non-Fed-Ang-Ammad Variation (1,500 Non-Fed-Ang-Ammad Variation (1,500 Total Ang-Amma Cost 1),500 Total Ang-Amma Cost 1),500 Total Ang-Ammad Cost (1,500 Total Ang-Ammad Cost (1,500 Total Ang-Ammad Non-Ammad	59, 300 Ted. Avg. Annual Cost 4, 300 Non-Fed. Avg. Ann. Cost 1, 800 Non-Fed. Ann. valut." 15, 400 Total Avg. Ann. Cost (b) 400 Total Avg. Ann. Cost		Solitania Avytammal Cost.	We flood control costs.
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Table 1 (continued)

				SYSTEM OF ACCOUNTS	,		
		Fian 2		t usid	Plan 5	Non-structural Plan 6	No Action Plan 7
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(3)			(2) Same as Plan is ((2) Same as Plan I ^a (2)	Bottom flora b inverte- brates would be dis- turbed only as required for cleaning bottom.	(2) No bottom disturbance.	(2) No bottom disturbance.*
	Increase in turbidity 6 (3) Turbidity 6 sediment sediment load during 6 loads will be greate after construction until 1 than Plan 1 in propose 1 gars 6 natural vegets — tion to the amount of tion are established on excavation 6 acres of clearing settle out in wide, slow quired for each plan moving, sammy area temes moving, sammy area temes of clearing and the plan project.		(3) Plam 3 required the (last amount of excava- tion of all four plans which alter channel di- mensions of the least clearing of all five structural plans. Plan a vould have the least in- sedimentation of the five sedimentation of the five sedimentation of the five structural plans. 1,5,9*	(3) Plan 4 would cause (3) greater turbidity over the short-term period than Plan 3. A less than Plan 1. Turbidity 6 sediment load would be roughly proportional to the different amounts of exawation 6 clering of the plans. 1.3,6	Because of the large amount of clearing re- quired with Plan 5, the turbidity 6, increased sediment load would pro- bably be as great or greater (bag any other plan.	(3) No change in turbidity or sediment load.*	(3) No change in turbidity or sediment load.
(5)	In ateas where excavation(4) proceeds deeper than the more recent sediment & silt deposits, draining of soils is possible. 1,4,9	In areas where excavation(4) Same as Plan i, a lower-(4) proceeds deeper than the ing of the surface water more recent sediment 6 cable 6 draining of soils sill deposits, draining is possible. 1,4,9 of soils is possible. 1,4,9	No change in water table (4) No change in water Plan 3 call (or a channel table, plan 4 call (ollowing the existing ing existing fight bottom profile. 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	# è -	(4) No change in water (able.	(4) No change in water table.	(4) No change in water table.
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(2) parts Danger (2) of drawnings, accidents (2) each danger (2) laparent die to off each off each each each each each each each each	(2) Slight sifety henefits, (2) Some as 1,4,9 to that Place of treater of the control of the con	Plan 1, except an 2 provides channel capac	(2) Same as Plan Lexcept (Classification of the Plan Derovides Ires clannel capacity.	(2) Same as Plan Lexcept (2) that Plan 4 provides slabtly less thannel capacity.	(2) Health benefits simi- iar to Pan I covere that Plan's provides no clannel improvements, it is less control of the five structural plane.	(2) Slight safety benefits smilar to Plans 1-5 but no approximent is channel capacity 1.4.9	

Table 1 (continued) SYSTEM OF ACCOUNTS

		Plan 1	Plan 2	Plan 3	Plac 4	Plan >	Someoff etural Plan 6	to Action Plan 2
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		(2) jemporar, employment of (2) local personnel during construction is anticipated. [1,5,9%	(2) temporary employment of (2) local personnel during construction is anticpated, 1,5,95	lemporary employment of local personnel during construction is antici- pated. 1.5,9%	(2) Temporary employment (2) of focal personnel during construction is anticipated, 10.9	lemporary employment of (2) local personnel during construction is antica- pated. 1,5,9	(2) Temporary employment of local personnel dering, construction is anticipated, 1,3,9%	
11		restriction to the control of the co	required, will prevent trainers that the trainers that parties that portion of that portion of the plans still remaining after Plan 2 is implemented.	Flood management plan will prevent further building in that pertion of flood plan still remaining after Plan 3 is implemented. 2.6.9 implemented.	of Flood management plan or transfer with prevent trapled. Will prevent traper to the protein at flood plan still remaining after Plan still remaining manned.	Hood management plus triplited. Will present triplited buildies in that portion of flood plain still implemented.	()) Flood management plan regarded. Will proceed further building in the flood plain. 2.6.9	
D. Adverse D. Pipat D	regional	Adverse regional (1) that area which would (1) no longer be part out the flood plain after any applement after a part out to building & development, To the extent that this scientists of the control of	of that area unith would fitted the look plan after income plan after implementation of plan implementation of plan after income the second plan after income the second are development. To the extent that this secondary development causes more rapid water rune of the increased received and second accessed as a secondary increased received and secondary income and secondary income and secondary income and secondary income and after the secondary income and acceptance in the secondary income acceptance	the theory of the could not longer be part of the food plain after my maplementation of Plain swould be more aftractive to building development. To the extent that this second any development consement apply wastr from the food of the could be succeeded or the could be succeeded or the stood of the could be succeeded or the stood of the succeeded or the succe	Of that area which would for the though part of the true to had had to development to the extent that this serious more replaciated discharge of track of water discharge of track of water that the though part of the track	of the hart area which would be longer to be fallen by and the more attractive to be iddity by development. Ho we tent that this assemblant concern metaph where reports and statistics of trade or waste and in the beautiful to the secondary development concern metaph where reports and the secondary of the second	t) Ne et moe in Nove plan area	plan is implemented, a lind amaxement plan is implemented, a limited amount on development conflict by expected in the iloud plans.
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PLAS DESCRIPTION	PLAN 1	PLAN 2	PLAN 4	PIAN 4	PLAN 5	PIAN C	F 7
	clean bottom, Widen to 10- 3-1 Deepen as much as 4-	clean bottom. Widen to No. Clean bottom. Widen to 40- 11. Deepen as much as 41. 48. Deepen as much as 41.	Clean bottom, Widen to 30-35". Follow existing bottom profile.		Clean bottom. Widen to 40.5 Clean bottom. Clear vege- 45. Follow existing tation from adjacent land. bottom profile, do alteration in channel diamensions.	Remove, Houd-proof, or raise structures. No change in channel or adiscent land	No action
STONIFICANT IMPACT							
(1) Economic	51,300 net ann al avg. Hood control benefits.	Annual cost exceeds benefits by \$1,600.	\$9,350 net annual avg. floud control benefits.	\$8,600 act annual avg. flood control benefits.	\$3,900 net annual avg. flood control benefits.	Arnual cost exceeds benefits by 921,700,	No change in existing situation,
	S900 ner ack, annual refrestion benefits.	3900 net avg. annual recreation benefits.	\$900 net avg. annual recreation benefits.	\$900 net avg. annual recreation benefits.	No recreation.	No recreation,	No recreation.
	\$2,200 annual benefits.	Total avg, annual cost exceeds benefits by \$700.	\$10,250 total net avg. annual benefits.	\$9,500 total net avg. annual benefits.	\$3,900 total net avk, annual benefits,	Total avg.ann.cost excreds benelits by \$24,850.	Sone
(2) Social	Partial alleviation of worry b inconcutence due to flood danke. Greenay provides rec- reation 6 aesthetic improvement.	Partial alleviation of worr, & inconvenience do to iloud damage, Creenway provides rec- reation & aesthetic improvement.	Partial alleviation of worv & inconvenience due to flood damage. Greenway provides rec- reation & aesthetic improvement.	Partial alleviation of worry & inconvenience due to flood damage. Greenway provides rec- reation & aesthetic improvement.	Partial alleviation of worry 6 inconvenience due to flood damage. Creenway provides recteration & aesthetic improvement.	Partial alleviation of worry & inconventence due to flood damage.	No change.
(3) Environmental	Remove risab & debris, Remove vegetative cover. Destroy existing bottom flora & invertebrates (some re-establishment). Temporary increase in trobatory siltation, & trobatory.	Remove trash & debris. Destroy existing bottom Orda & invertebates (some re-establishment). I emporary increase in turbidity.	Remove trash 6 debris. Remove vertarive cover. Destroy existing bottom lora 6 invertebrates (some re-establishment). Temporary increase in Temporary increase in turbidit, siltation, 6 turbidit, siltation, 6	Remove trash & debris. Remove vestative cover. Destroy existing bottom flora & invertebrates flora & interest in flora & interest in flora & interest in flora & interest in	Remove trash 6 debris. Bearow vegetative cover. Destroy existing bottom flora 6 invertebrates (some re-establishment). Imporary increase in remporary increase in tribditive.	Removal of situatures sixia specific tanks. No change in channel or surrounding vegetation. Least adverse impacts of all action plans.	No change.
	Lower surface water table. Adverse impacts greater than for Plans 3 or 6.	Lower surface water table. Adverse impacts greater than for Plans 3 or 6.	No change in water table. Adverse impacts are least of all structural plans. Only Plan 6 has fewer adverse impacts.	No change in water table. Adverse impocts greater than for Plans 3 or 6.	No change in water table. Adverse impacts greater than for Plans 3 or 6.	No change in water table. No significant adverse impacts.	No change in water table. No change.
PLAN EVALUATION					and the property of the state o		
(1) Contribution to Alleviate 92: of planning objectioed damakes. tives (2) Relationship to 4 National Accounts	Alleviate 92% of tangible flood damages.	tee 91% of tangible	Alleviate 88% of tangible flood damages.	Alleviate 90% of tangible flood damages.	Alleviate 63% of tangible flood damages.	Alleviate 100° of tanxible flood damages.	No alleviation of flood control damages.
(A) NED	\$2,200 total net annual avg. benefits.	annual costs exceed brnefit, by \$700.	\$10,250 total net annual ave. benefits	59,500 total net annual	\$3,900 total net annual	Annual vosts exceed	No change in existing situation.
(b) F(j	Benefits (clearing of bortom debris) same as for all other structural plans. Only Plan 6 has note.	Brieffts same as for all other strictional plans. Univ Plan 6 has more	Benefits same as for all other structural plans. (nlv Plan 6 has more.	Brnefits same as for all other structural plans. unly Plan 6 has more	Benefits same as lor all other structural plans. Only Plan 6 has more	West EQ benefits and some short on clearing, but trmoves sources of waster, septing and overflow.	No change
	Work tover removed, water table lower, and fore tyrbidity than any it of h.	Note cover removed, water Table lower, and more cubidity than	least cover removed a least turbidity of all structural plans, unly Plan i nas less	More cover removed 6 more turbidity than with plans 1 or 6	More cover removed a mare turbidity than with Plans 4 or 6.	No chance in comit of forbidity except minor fectors.	No change
			So didner th Water table	No change in sates table	An hange in water table	The contract of the contract of	
9 d.	An institution and while the importance of 110 miles of the importance of 110 miles	Particular and seekled organization of the control	Recreation A desired in Approximately 1993 Feel to a country pro- perties of the co- dition of the co- dition of the co- taction of the co- taction of the co-	Section 100 medical control of the c	rected for slastfer to represent the slastfer to start the slastfer to start the slastfer to slastfer	Hand trades served by the control of	3 A

TABLE 2 (Continued)

10. MD Renefits are projectional to and roughly equal to net average NED benefits. 1. Plan Response to Associated Evaluation Criteria 1. Aveptability Well below Pr. in local in local in local preference. 1. Manual Ma	c 24 ld	-	. 37 60			
(d) NB to the fits are projected by the fits are projected by the fits are agency NBD before Projected by the fits are agency NBD before Projected by the fits and the fits are agency and the plant of		LAN S	7 (1911)	ries 3	PLA: 0	PLAN 7
A Aceptability 4(2) below protections in local protection in local protections in local protection as part of the plant of	Benefits are proportional to and roughly equal to ner average NED benefits.	Benelits are proportional to and roughly equal to net average NED benefits.	Benefits are proportional to and roughly equal to net average NEB benefits.	Renefits are proportional to and roughly equal to net average NED benefits.	Contributions to 80, like those for NFD, negative (*821,700).	So change.
h havepeability Well below Prince on a history stated out of the plant	ria .					
to thistens. Thistiens. Recreation Total Project Reversibility	in local Plan 2 was the plan pre- ie. terred at 10-20-75 hear- ing in fautinhete.	Well below Plan 2 in local preference.	Well below Plan 2 in local preference.	Well below Plan 2 in local preference.	Plan t received no support from those at 10-20-7) hearing.	Plan 7 received no support from those at 10,20-75 hearing.
to the craims (d) incertainty (e) (coxtablity thood Control Referention Total Project Reversibility	All steps necessary to achieve stated outputs of plan 2 are included as part of the plan.	All steps necessary to achieve stated outputs of Plan 3 are included as part of the plan.	All steps necessary to achieve stated outputs of Plan 4 are included as part of the plan.	All steps necessary to achieve stated outprix of Plan 5 are inclosed as part of the plan.	All steps necessary to achieve stated outputs or Plan 7 are included as part of the plan.	٠.
(d) Incertainty (e) (coxtaph) al scope Hood Control Retreetion Total Project Reversibility	Ranks 5th of the structural plans	Most efficient b effec- tive of all 6 structural plans	Ranks 2nd of 6 structural plans.	Ranks 4th of 1 stractors and plans.	lowest of all plans in effect of the and effect	4 //
(e) (costable) (a) scope (i) tood (control Recreation Total Project	Nanks 4th of 4 channel modification plans.		Ranks 2nd of 4 channel modification plans.			
tooktabii- tal scope blood Control Recreation Total Project Reversibility	Less than 20%.	Less than 20%.	Less than 200.	Less than 207.	Less than 20°.	N'A.
Hood Control Recreation Total Project Reversibility	Limited to study area. Areas above (111 St. b below Fertilizer Plant Kd. have been deleted from consideration	Limited to study area. Areas above G111 St. 6 below, pertilizer Plant Rd. have been deleted from consideration.	Limited to study area. Areas above Gill St. 6 below Frtillizer Plant Rd. have been deleted from consideration.	Limited to study area. Areas above (ill St. b. below fertilizer Plant Rd. have been deleted from consideration.	Limited to study area, Areas above (111 St. 6 below Pertilizer Plant Rd, have been deleted from consideration.	No change.
Recreation Total Project Reversibility	\$6*to	1.67	1.56	1.30	0.51	V /X
Total Project Reversibility	1 53	1.53	1.53	N/A	N/A	3/A
Reversibility	5.45	1.66	1.55	1.30	0.51	N/A
fare structural changes for Plan 1 than for Plans 3,4 or 5.	All structural plans outh be reversed in time necessary for vegetation to revert vegetation and ondition. Make structural chains plans i. or r. A. Plans i. or r.	All structural plans could be reversed in time necessary for wegetation to revert to original condition. Feer Structural Langes than plans 1,2,466.	All structural plans could be reversed in time necessary for vegetation to revert to original condition. Make structural changes flans 3 or 5.	All str. utal plans outlibe reversed in time necessary for vegetation to revert to original condition. No structural change.	least easily reversed. Reverse undestrable.	∀ ×
Stability Very stable.	Very stable.	Very stable	Very stable.	Very stable,	Very stable	N/A
IMPLEMENTATION RESPONSIBILITY						
(1) Federal Construction of all load-control structures Preparation of land Railcoad crossing modi-	Construction of all flood con rol strictures. Preparation of land Railroad crowding modi- ications.	Construction of all fluod-control structures. Preparation of land Rathroad crossing medi- fications.	Construction of all llood-control structures. Preparation of land. Railroad crossing modi- ications.	Clearing and other preparation of land		₹ , X
(2) Non-Federal lands, essentials by rights offwar 111119 and linear offwar 11119 and linear offwar 1200 Albitroace of project. Applications dispersent Plan.	off of territon cost lands of the cost of	Of Officeration cost. Lands, correction of the condition	Vol. recreation cost. Lands, casement of its inthices int	lands, casements or rights of way. Prility and firstines Highwas resisting, modifications. Vashrinance of project. Mapt Flood Vanayemini Plan.		

Conclusions

The selected plan will provide net economic and environmental improvements to the area. The proposed action will have no significant adverse effect on the environment and is not environmentally controversial. The following factors were considered pertinent:

- 1. The environmental value of the affected area
- a. Much of the creek in the project area is polluted and aesthetically unpleasing in its present state.
- b. The creek and adjacent cover in the revised project area provide only marginal habitat for limited types of fish and wildlife.
- c. The area possesses no unique plant or animal life. Similar but more valuable habitat is available in the rest of Leith Creek and the many streams and creeks surrounding Laurinburg.
- d. The most environmentally valuable portions of the original project area were deleted from the plan.
 - 2. The area affected
 - a. Less than two miles of Leith Creek are affected.
- b. Only a narrow strip on one side of the creek will require total clearing and placement of fill.
 - 3. Severity of the impact

- a. None of the impacts are of such severity as to warrant major concern.
- b. The proposed action could be reversed in the time necessary for the original vegetation to reestablish.
- c. Cleaning of the creek bottom, landscaping and a continued maintenance program will result in a net improvement to the environment of the area.
- d. No controversy has been raised as a result of the project by agencies, groups or individuals.

Coordination with Others

The study of Leith Creek was initiated in response to a request by the City of Laurinburg, North Carolina. A public meeting was held on 20 November 1975 at Laurinburg to present the study findings to all interested parties. An announcement of the public meeting appeared in the area newspaper prior to the meeting date, and by letter of 6 November 1975, numerous individuals, groups and agencies were urged to attend. Oral comments were recorded, and written comments after the meeting were invited. Follow up letters were sent to the North Carolina Department of Natural and Economic Resources and the U. S. Fish and Wildlife Service to solicit comments on the project. Both agencies indicated concurrance with the finding that no significant environmental impacts would occur. The North Carolina State Historic Preservation Officer was furnished copies of the Cultural Resources

Survey and agreed with the findings that no resources were present within the small area of impact. The environmental assessment and negative assessment were sent to local, State, and Federal agencies having jurisdiction or interest in the project, and the general public was notified of its availability. A 404 notice was issued, and after 30 days, only two responses were received. No objections to the project were voiced. All comments have been fully considered and incorporated into the statement.

The detailed project report (DPR) will be released to the cognizant government agencies subject to approval by SAD. A copy will be made available to the public by the local sponsor at Laurinburg, and all groups and individuals expressing interest will be notified of its availability.

Incl

- 1. Photographs of Leith Creek
- Letter from N. C. Department of Natural & Economic Resources -12 June 1976
- 3. Proposed letter from U. S. Fish & Wildlife Service 12 December 1975
- 4. Letter from N. C. Department of Cultural Resources 6 April 1976
- 5. Letter from Scotland County Parks & Recreation Commission 29 October 1976
- 6. Letter from City of Laurinburg 8 October 1976
- 7. Letter from N. C. Department of Natural & Economic Resources 21 April 1977
- Letter from N. C. Department of Natural & Economic Resources -21 April 1977
- Letter from Scotland County Parks & Recreation Commission 30 July 1977
- Archeological Reconnaissance of Leith Creek Flood Control Project Area
- 11. Section 404 Coordination

DESCRIPTION OF PHOTOGRAPHS

- A. Midway between Gill and Main Streets, facing downstream. Vegetation from one side nearly covers this narrow reach (4-5 feet in width). City of Laurinburg would like to extend the park (in foreground) downstream to Carver Street, possibly farther.
- B. Approximately 1/3 way between Main and Carver Streets, facing downstream. Vegetation and debris trap floating trash, some of which becomes waterlogged and sinks to bottom. Sand and silt constitute the bottom, which is often anoxic due to low velocity, discharges into creek and obstructions to flow.
- C. Immediately below Carver Street. Dense privet, honey suckle and blackberry covers and traps trash and debris.
- D. North Caldonea Road, just above bridge.
- E. Railroad crossing just above Commonwealth Street.
- F. Downstream from Commonwealth Street.
- G. Just below McKay Street, facing upstream. Wider channel, two to six inches deep. Very low banks and some standing water in pools edjacent to channel.
- H. Fariher downstream from McKay Street.
- 1. Between S.R. 1645 and U. S. 74 Bypass, below project limits. Channel less defined. More wetland vegetation.







B

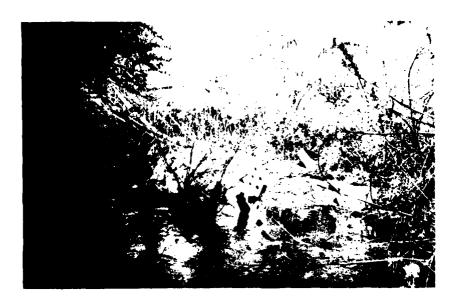
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JAMES E HOLSHOUSER, JR. GOVERNOR . George W. Little, STOPETARY

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Privation Destination of a

June 14, 1976

Mr. Jack Lesemann, Chief Engineering Division Charleston District Corps of Engineers P. O. Box 919 Charleston, South Carolina 29402

Dear Mr. Lesemann:

In response to your letter of 25 May 1976, personnel from this office conducted an on-sight investigation of Leith's Creek keeping in mind your agency's proposed flood control project on that creek for the City of Laurinburg.

We found your proposal to be completely acceptable and concur with that proposal. At this time, no State funds are available for the non-federal share of the project nor has any request been received for such funds.. Therefore, we must assume the non-federal share of project costs will be paid entirely by the City of Laurinburg.

Should you have any questions concerning our investigation, please contact Steve Reed of the Water Planning Section or give me a call.

Sincercly.

Ozzřé Gray

cc: Steve Reed

PROPOSED LETTER

District Engineer U.S. Army Corps of Engineers P.O. Eox 919 Charleston, South Carolina 29402

Dear Sir:

The Fish and Wildlife Service has made a preliminary review of the Leith Creek, Scotland County, North Carolina, 205 project. We hope our corments and recommendations can be helpful to you in deciding on a final alternative for this project.

Leiths Creek is a slow moving Piedmont stream characterized by poorly defined channels and minimal flow. The largest portion of this project lies within the city limits of Laurinburg, North Carolina. There is excellent wildlife habitat in 2 sections of the proposed project area. These are from the 401-15 bypass to Gill Street and from SR 1645 to the U.S. 74 bypass. The upper location contains a good stand of hardwoods such as tulip poplar, sycamore, sweet gum, black gum and white oak on the better drained soils. Numerous trees have diameters of 24 inches or greater. The understory contains a prolific growth of greenbriar and honeysuckle. The land adjacent to the creek is a low lying, swampy area that provides excellent habitat for wood ducks, woodcock, various species of songbirds and screech owls. In addition, beaver, squirrels, rabbits, raccoons, and other small mammals are found here. Fishery habitat is limited to darters, daces and possibly a few sunfish of minimal size. The

lower portion of the project area contains an excellent wooded swamp that consists primarily of cypress and black pure. This area supports a good vildlife population. Vood ducks, woodcock, hawks, owls, and various songbirds are seasonally present. It is also excellent habitat for warmals and reptiles and amphibians. Aquatic habitat at the U.S. 74 bypass favors such fish species as red-breast sunfish, pickerel, and largemouth bass.

Eoth of these portions of the stream are unique in that they occur so close to a metropolitan area. In a relatively short distance the habitat types vary considerably. The upper part of Leiths Creek is more characteristic of upland habitat and the lower portion is composed of wooded swamp and associated biota.

At numerous points along the creek, septic tank overflow empties directly into the water. This is easily seen on the east side of Church Street bridge, where a gray, foul-smelling effluent enters the stream. This adds to the degraded water quality and marginal stream habitat in this portion of the creek. The wooded swamp below S.R. 1645 acts as an effective biological filter in controlling pollutants in the stream and when the water reaches the U.S. 74 hypass the quality has improved to the point that aquatic life is apparent. Water quality tests would be needed to determine how widespread the water pollution is and to what extent the cypress swamp filters the vater.

Fish and wildlife habitat between Cill Street bridge and S. v. 1645 is marginal at best. A heavy growth of honeysuckle and greenbrian

to scattered throughout this portion of the stream and on the streambanks. Flooding potential appears to be greatest at this location.

Since flood damage would appear to be minimal and fish and wildlife habitat is very good to excellent above Gills Street bridge and below S.R. 1645, we recommend that all flood plans be revised so these areas may be omitted in the final plan. If they are omitted, any of the 5 alternatives are acceptable to the Service at this time; however, Plan 5 appears preferable.

We look forward to providing you with a Fish and Wildlife Coordination Report when a final plan is adopted. Please keep us informed of progress in this matter.

Sincerely yours,

Regional Director

Cernohous:Pobinson:pm



STATE OF NORTH CAROLINA Department of Cultural Resources Raleigh 27611

James E. Holshouser, Jr. Governor

April 6, 1976

Division of Archives and History Larry 5. Tise, Director State Historic Preservation Officer

Grace J. Rohrer S cretary

> Colonel Harry S. Wilson, Jr. US Army Corps of Lagineers Post Office Box 919 Carleston, South Carolina 29402

Dear Color: | Wilson:

Archaeology Section staff have reviewed a report from Dr. David Medican of St. Andrews College concerning an archaeological survey that he colducted on Leith Creek, Laurinburg, North Carolina. This survey was connected under contract with your office in connection with the Laith Creek Alterative Channel Conveyance Plan Project for Laurinburg.

Dr. McClean reported that his archeeological survey revealed no sites of any kind were present in the project as a. The Archieology Section concurs with Dr. McClean's report, and recommends that immediate archaeological clearance be granted for this project.

In view of Dr. McClean's report, we remove our objection of Not 1 : 24, 1975. Mank you for your cooperation in this matter. Please call upon us if we can be of further service.

Sincerely yours,

Larry E. Tise

LET:e

cc: Dr. David McClean

The foregoing comments are rendered as a free service of the State Historic Preservation Of the and the staff of the Division of Archives and History, Department of Culture. Resources to account applicants, governmental agencies, and other institutions in complying with the requirements of one or more of the following laws, orders, or statuted: P.L. 59-202, 74-292, 35-1, 49-455, 91-100, 93-291, 93-383; Executive Order 11593; 36 CFR 800; G. S. 70, 113-229, 113-5, 121-4, 121-8, 121-12, 121-22, 136-42.1. Further information on the review process and fixed regardless to see that mean torical and archaeological resources may be found in "maximum and Assess to eats or constructed Archaeological Resources: Policies and Procedures of the North Carolina State Instance Or tersurran Officer and the Department of Cultural Resources," a copy of which with us soon to make add citizens upon written request.

INCL ..

Scotland County Parks and Recreation Commission

HENRY MCLIOD JR., CHAIRMAN SAMUEL SNEAD VICE-CHAIRMAN H. REGINALD POTEAT W. L. BAKER J. ROUERT GORDON JAMES E. MILLIGAN JONATHAN MCLEAN TOM WHITLOCK DUNGAN MCKAY NANCY SHELLEY HARLEE JOHNSTON ELDUISE JACKSON

WILLIAM J. SCOTT, EXECUTIVE DIRECTOR-SECRETARY

P. O. Box 1910 -:- 1835 South Main Street -:- Phone 919 270-041.2

LAURINBURG, NORTH CAROLINA 29352



October 29, 1976

Mr. Steve Morrison Corp of Engineers Charleston District P.O. Box 919 Charleston, SC 29401

Dear Mr. Morrison:

I enjoyed your recent visit to Laurinburg and a chance to Frank of your interest in providing park facilities in your projects. I have discussed the Leith Creek Project at leagth with my Parks & Recreation Commission and we feel this is a controller and discing project for our county. However, we have had so many requests for parks in other parts of our county, that our Commission has agreed not to acquire additional park lands until a county-wide most a projected.

I seed that the project can be incorporated into this mostor pictal hope sails in time to jointly devices this area with the Compositive City of Laurinburg. Please keep me informed on the time in me of the projects and any changes on any matters related to jock it verifient.

Sincerely, Scott William & Scott William J. Scott teconitive Director

WJS/dw

cc: Steve Floyd Ed Forbes

Gity of Laurinburg.

October 8, 1976

Mr. Steve Morrison U. S. Army Corps of Engineers P.O. Box 919 Charleston, SC 29402

Dear Mr. Morrison:

We enjoyed your visit on September 22 and were especially glad to hear of the possibility of developing the Leith Creek Flood Control Project as a recreation area.

Over the past several years, I have heard many people falk of developing Leith Check as a decreational greenbelt and we view the Corps's efforts with the Leith Creek Project as the key to this hope.

We appreciate your sharing this information with us and 100k forward to working with you and your office is noting laith. Creek a lasting benefit to the Laurinburg community.

Sincerely yours

Stophen C. Floyd Acting City Manager

Toplan C. Fiond

SCF/brc

JAMES B. HUNT, JR., GOVERNOR .

HOWARD N. LEE, SECRETARY

P. O. BOX 27657 RAUEIGH 27611 TELUPHONE 919 735 4961

April 21, 1977

Colonel Harry S. Wilson, Jr.
District Engineer
Charleston District, Corps of Engineers
P. O. Box 919
Charleston, South Carolina 29401

Dear Colonel Wilson:

This letter is to inform you of the State's position on the proposed Leith Creek Flood Control Project (Sec. 205) in Laurinburg, Scotland County, North Carolina.

On April 14, 1977, the Environmental Management Commission, upon receiving a favorable recommendation from the staff of this Department, unconditionally approved the Detailed Project Report. The Commission has the statutory responsibility to review projects of this type. Their action, therefore, is the State's final approval for the Leith Creek project.

With kindest regards and best wishes, I am

Respectfully yours,

JAMES B. HUNT, JR., GOVERNOR . HOWARD N. LEE, SECRETARY

P. O. BOX 27687 RALEIGH 27611 TELEPHONE 919 /32-4740

April 21, 1977

Colonel Harry S. Wilson, Jr. District Engineer Charleston District, Corps of Engineers P. 0. Box 919 Charleston, South Carolina 29401

Dear Colonel Wilson:

A staff review of the Leith Creek Project (Sec. 205) was conducted to prepare recommendations to the Environmental Management Commission. Followup on the comments indicated that some of them were over-stated. For example, an elaborate sediment monitoring plan does not seem to be justified in this case. We do urge you to use sediment basins or other means to keep the downstream sediment load to a minimum during and after construction.

I have attached copies of some of the substantive comments on the project. These are provided for your information and consideration in carrying out this and other projects. The comments are not requirements or conditions or project approval. As Secretary Lee stated in his letter to you, the Environmental Management Commission has approved the project unconditionally.

Please let me know if I can be of assistance with this project or with other activities of your District.

> Sincerely yours, John movis

John Morris

Water Resources Development

Attachments

MEMORANDUM

TO: Tom Fahnestock

FROM: W. E. Knight

SUBJECT: Leith Creek Flood Control Detailed Project Report

We have completed our review of the small flood, control project which the U. S. Army Corps of Engineers proposes to construct on Leith Creek in Scotland County.

While not crucial to the analysis of the project, there are some inaccuracies in the socio-economic description of the county. The projected repulation of 45,300 in 2020 shown in paragraph 29, page 8-12, appendix 1 is based on Series "C" rather than Series "E". The April 1976 projections for North Carolina based on disaggregated OBERS "E" for North Carolina give 34,900 for 2020. However, projections by the North Carolina Department of Natural and Economic Resources are considerably higher than disaggregated OBERS. Our projections for Scotland County for 2020 are 57,200 Series C; and 48,400 Series E. On July 1, 1975 Scotland was estimated to have a population of 30,000. This was an increase of 11.3 percent from 1970, and far exceeded the average increase for the State of 7.2 percent. This is a departure from past trends; if it continues the population will greatly exceed projections which indicate the county will grow less rapidly than the State.

The April 1976 BEA disaggregations of North Carolina published by the South Atlantic Division of the Corps projects per capita income in the county in 2020 at \$9,906 in 1967 dollars. This is considerably less than the projection in paragraph 31, and reflects the fact that per capita income in the county is less than that for the Yadkin-Pee Dee Basin.

We have no objections to the plan recommended by the District Engineer. The benefit-cost ratio is favorable and there appears to be a minimum of environmental disruption. The recommended plan will certainly reduce damages to existing structures. The Cities of Laurinburg and East Laurinburg should be required to pass flood plain ordinances to insure that there is no development on lands protected by the channel improvements. The development of a greenway and associated recreation seems a most progressive idea, and we gladly endorse it. The recreation benefits seem to be calculated very conservatively making this phase of the project even better than shown.



.ACE E. CASE. Hendersonville Chairman I. ANDERSON. Newland .IAM C. BOYD. Winston-Salem A. HUNEYCUIT. Locust LIAM W. IVLY. Asheboro

January 26, 1977

ROBERT B. MAZEL, Baleigh Executive Director MERRY E. MOORE, JR., Clint ROSCCE D. SANDLIN, Jackso-DEWEY W. WELLS, Canden V. E. WILSON, 111, Rostly 9

MEMORANDUM

TO:

Tom Fahnestock

FROM:

Frank B. Barick 2

SUBJECT:

Leith Creek Flood Control Project

The subject document has been reviewed and we concur in the relatively minor adverse impacts to fish and wildlife resources which will result from the proposed plan.

Some mitigation of losses has been effected by reducing the length of channel excavation from that which was originally proposed.

We feel that the Principles and Standards evaluation procedure which was followed by the Corps has resulted in a more cost effective and less environmentally damaging project.

We feel constrained to point out, however, that widening the channel from eight feet to 35-40 feet will reduce the depth of water to onefourth of its present depth. Considering the fact that the stream is described as having a "small" volume, it follows that during non-flood, low or average flow conditions, there will be very little water in the new stream bed. During much of the time it could be a 20 to 50 foot wide mud strip through the city with the primary source of water being from residential sewer drain fields. It seems to us that this would not constitute an asset to a high use recreational park situation. This could be much improved by shaping the new channel so as to maintain one side of it considerably lower than the other and encouraging a grass growth well into the channel on the tapered shallow side. The deep side should, of course, be on the far side where the trees and other vegetation are not as completely removed. This would provide for continuous stream flow and preservation of fish habitat whereas a 35 foot wide flat bottom would result in no livable habitat for fish during periods of normal or low flow.

January 26, 1977

MEMO TO Tom Palmestock

Another way to accomplish this objective would be to install one or two low dams to maintain a ribbon of water 35 feet wide and two or three feet deep through the park. This might be aesthetically more pleasing than the design described above. It would, however, require periodic removal of accumulated sediment. One way to reduce clogging the 1.97 miles with sediment would be to install two or three sediment traps at points of easy access and dip them out as needed.

TSC:en

DIVISION OF ENVIRONMENTAL MANAGEMENT

AIR QUALITY SECTION

January 19, 1977

MEMORANDUM

TO: Lafayette Jones, Field Office Manager

FROM: Alan P. Grainger, Engineering Technician III Hip

Air Quality Section

SUBJECT: Leith Creek Flood Control Project

Scotland County, North Carolina

The document listed above has been reviewed, and the following comments are provided:

Any open burning conducted for this project must be in compliance with the North Carolina Open Burning Regulation (No.1.)

Proper steps should be taken to minimize dust created by this project.

APG/gc

cc: Central File

February 17, 1977

MEMORANDUM TO: Lafayette N. Jones, Field Office Manager

South Central Field Office

FROM:

Floyd R. Williams, Land Quality Section

SUBJECT:

Leith Creek Flood Control Project

If greater than one acre of land is to be disturbed, an erosion control plan will be required. This plan should be submitted to the Land Quality

Section, D-NER, at least 30 days prior to commencement of the land
disturbing activity. The plan must be reviewed before construction can begin.

FRW/fbc

WATER QUALITY COMMENTS ON THE DETAILED PROJECT REPORT

Leith's Creek Channelization Project

The major adverse impact on surface water quality resulting from the project will be an increased sediment load to Leith Creek (Class C Swarp, 7Q10-0.04 cfs). The methods by which the levels of sediment loading are predicted contain assumptions and arbitrarily fixed parameters which may produce considerable error in the results. Thus, it is not possible to accurately predict the occurrence of water quality standard contraventions due to increased levels of turbidity. However, based on the experience of Division of Environmental Management personnel with similar Corps of Engineers projects in other regions, turbidity standard contraventions are anticipated in the 1.97 miles to be channelized by the project and is a two mile segment immediately downstream from the project reach. This is approximately the same segment of stream which assimilates the effluents from a number of treatment plants in the area. The bottom of the dissolved oxygen sag curve resulting from the effluents discharged by the Laurinburg Industrial (0.024 MGD) and Eaton Corporation (0.005 MGD) wastewater treatment plants is predicted to occur 75 feet upstream from the upper end of the proposed channel. A similar type of sag point due to the discharge from the City of Laurinburg's Leith Creek Wastewater Treatment Plant (2.0 MCD) occurs two miles below the confluence of Leith Creek and Little Creek. This location is approximately one mile downstream from the furthest point expected to experience turbidity violations. The stream bottom in the section proposed for channelization is expected to have considerable amounts of oxygen demanding compounds in it, some from natural conditions and some as a result of the treatment plant effluents. These materials will be resuspended by the project and may exert oxygen demand in a stream segment already in continual danger of dissolved oxygen standard contraventions (several are noted in the basin plan). None of the mentioned treatment facilities are currently producing an effluent of sufficient quality (EGD₅=5mg/1; NH₃=2mg/1) to maintain the stream for its assigned best use, fish propagation. The 0.005 MGD discharged by Eaton Corporation must comply with final effluent limits before July 1, 1977, but the others are scheduled to be upgraded according to the Laurinburg-Maxton 201 Facilities Plan (currently in State review), which probably will not reach the construction phase until after the completion of the proposed channelization and following the time of the major adverse impact (six months to a year following the project).

It is recommended that the proposed project be ammended to include instream sediment basins to reduce downstream sedimentation and a turbidity and
suspended solids monitoring program to establish the magnitude of the impact
due to sediment transport.

One basin should be located at the downstream end of the proposed channel, and three more basins should be placed at appropriate sites at one half mile intervals upstream from the first basin. These basins should be maintained throughout the construction phase of the project. The basins may have the additional benefit of providing sanctuaries for fish during low flow periods, although by virtue of their intended purpose, they will not be permanent.

The turbidity and suspended solids monitoring program should include the following sampling stations:

- 1. Leith Creek at the L & S Railroad culvert or the bridge on SR 1645, the downstream end of the proposed channel.
- 2. Leith Creek at the Gill Street bridge, the upstream end of the proposed channel.
- 3. Leith Creek at the SR 1603 bridge, approximately 0.6 mile below the downstream end of the proposed channel.
- 4. Little Creek at the U.S. 74 (Business) bridge.
- 5. Leith Creek at the U.S. 74 (Bypass) bridge, approximately 0.8 mile below the downstream end of the proposed channel.
- 6. Leith Creek at the SR 1609 bridge, approximately 1.5 miles below the downstream end of the proposed channel.
- 7. Leith Creek at the SR 1619 bridge, approximately 3.9 miles below the downstream end of the proposed channel.

Sampling frequencies should vary depending on when and where they are taken, with the following suggested schedule:

- Pre-project grab samples should be obtained from all stations and analyzed for three non rainfall days and three rainfall days.
- 2. During the project, all stations should be monitored daily by grab samples.
- 3. For the first six month period following the completion of the project, all stations should be monitored weekly by grab samples.
- 4. Following the first six month period after construction, sampling frequency will depend on the results obtained from the previous analysis. At a minimum, this sampling should be bimonthly by grab sample and should last until five years following the completion of construction.

Scotland County Parks and Recreation Commission

HENRY MCLEOD, Chairman
DUNCAN MCKAY, Vice Chairman
J ROBERT GORDON
O M GRAHAM
ELQUISE JACKSON
HARLEE JOHNSTON
DAVID MCNAIR
JAMES E MILLIGAN
H REGINALD POTEAT
NANCY SHELLEY
SAMUEL SNEAD
ALLAN THAMES
DR DAVIO WILLIAMS

WILLIAM J. SCOTT, Secretary Executive Director

P.O. Box 1910 — 1835 South Main Stre Laurinburg, North Carolina 28352 Telephone (919) 276-0412

July 20, 1977

Mr. David Harris Corps of Engineers Office P.O. Box 919 Charleston, SC 29402

Dear Mr. Harris:

The Scotland County Parks & Recreation Commission met July 12 and officially endorsed the Leith Creek Project in Laurinburg. The Parks & Recreation Commission voted unanimously to support the project which includes the strip park along the creek.

This project will benefit Laurinburg and Scotland County for many years and will provide a better quality of life for the citizens.

Please keep us informed on your plans and thank you for the opportunity to express our interest in this development.

Sincerely,

William J. Scott Executive Director

William / Scott

WJS/dmc

INCL 9

1975 Award Winner - Notional Accomistion of County

ARCHAEOLOGICAL PROCENNAISSANCE OF LEITH CREEK FLOOD CONTROL PROJECT AREA

APPLICANT: U.S. Army Engineer District, Charleston Corps of Engineers

PROJECT NAME: Alternative Channel Conveyance Improvement Plan Leith Creek, Laurinburg, N.C.

LOCATION: The area of Leith Creek under consideration, begins at the bridge over Leith Creek on Gill St. Laurinburg N.C. and continues to the L & S Railroad near State Road 1645, also within City Limits of Laurinburg.

CLEARINGHOUSE: U.S. Army Engineer District, Charleston Corps of Engineers --P.O. Box 919 Charleston S.C. 29402

Dates OF INOPECTION: March 19, 23 and 24, 1976

SURVEY MADE BY: Dr. David A. McLean, Archaeologist, and crew. St. Andrews Presbyterian College Laurinburg, N.C. 28352

AGREEMENT DETWEEN: St. Andrews Presbyterian College, Dr. David A. McLean and U.S. Army Engineer District, Charleston Corps of Engineers, Charleston, S.C.

CONTRACT PROPOSAL NO: 118

PROCEDURE

1.

Survey began at the Bridge on Gill St. and followed the Horthern bank of Leith Greek covering 100 feet from said Creek to the L & S Railroad near State Road 1(45. Wherever Land appeared above water samples of soil (50' x 50') cifted and inspected. No evidence of prehistoric or historic occupation was found.

Beginning at L & S Railroad near State Road 1645 and returning up Leith Creek on the Southern side to Bridge on Gill St. Samples were taken (50' x 50') wherever possible. No evidence of prchistoric or historic occupation was found.

Approximately 350 tests were made. (See Glessary).

Most of the terrain was muddy, swampy, and where you could walk on dry land, congested with briars and privett bushes.

2.

Latest edition of the National Register of Historic Places (Federal Register, Vol. 40 No. 24, Tuesday, Pebruary 14, 1975)

HICL 10

Page 2

and all monthly supplements were consulted to ascertain if any of the property located within 100 feet on either side of Leith Creek, Laurinburg, N.C. from Gill St. to the L & S Railread near State Road 1645*contained areas nominated to the Register.. NONE WERE FOUND

3.

Mr. Pat Garrou of the North Carolina Bureau of Archives and History, Archaeology Section, was consulted. He researched the project under investigation and reported that as xfor as he could ascertain, the property was clear of any site, either prehistoric or historic as recorded in the National Registry or nominated to same.

President of the Local Historical Society was conculted and he stated that there were no sites on the above property that had ever been, or now being recommended to the Mational Registry of Historic Places.

4.

Research into literature and documentary papers revealed no evidence of either historic or prehistoric sites.

5.

On the pround (and vater) recommaissance was conducted at previously mentioned in Section # 1 of this report. No evidence of sites either prehistoric or historic were found.

AS FAR AS I AM ABLE TO ASCERTAIN, THERE AMD NO PROPERTURED OR HISTORIC SETES OF ANY SORT ON THE PROPERTY 100% OF EITHER SIDE OF LEITH CREEK FROM GILL ST. TO THE L & S HATLROAD NELL STATE ROAD # 1645.

March 25, 1976

Archaeologict.
St. Andrews Mollege
Laurinburg, 1.0. 28352

CLOSSARY OF TERMS USED

Diagnostic Sites

Site: Where one or more artifacts are found

Insignificant Site: Where surface collection is adequate to document previous occupation or activities. No reason to impede construction or destruction of site.

Important Site: Where surface collection is inadequate to document previous occupation and indicate that there is more to be found underground, but not enough to be nominated to the National Registry, but enough to recommend salvage archaeology.

Significant Site: Site or sites with important artifacts that would indicate the need for careful excevation and preservation. Such a site would be recommended for nomination to the National Registry.

Methods of Surface Examination

<u>Dogleash Technique</u>: Where one end of a ten metre string is tied to the searcher and the other to a post in the center of the site. The searcher rotates in the site until string is wound up, This insures careful survey of site.

50' by 50' Technique: Where visibility of the ground is poor and recovery of artifacts by the walkover technique is poor or impossible, then samples of earth (12 qts.) are removed at 50 sq. intervals, sifted to recover artifacts.

<u>Walkover reconnaissance technique</u>: Where visibility of the ground or <u>earth is good and artifact recovery is good</u>, searcher covers the ground in approximately 10 ft. intervals collecting artifacts lying on top of ground.

Salvage Archaeology: When survey indicates that mitigating action is necessary and a delay in construction is requested while rapid excavation is made to ascertain and recover as much information as possible before site is destroyed.

EVALUATION OF FACTORS INVOLVED IN THE DISCHARGE OF DREDGED OR FILL MATERIALS IN NAVIGABLE WATERS. CULTURE A FROM AD CER 230

Paragraph	Criteria	Relation to Selected Plan
230.4-1(a)	PHYSICAL EFFECTS	
230.4-1(a)(1)	Wetlands	Excavated material from the creek bottom would be placed in a series of narrow mounds along a 2,500-foot portion of the low area adjacent to Leith Creek, just below the sewage treatment plant (see Plate 2). The area affected is intermittently flooded wetlands, the dominant aquatic species being arrow-arum and broad leaved arrowhead, which would be completely and permanently covered. The area is poor to marginal for fish and wildlife because of its closeness to residential and commercial development, trash deposited in the creek from these areas, and pollutant discharges into the water. The area does not qualify as "highly productive" in that it does not provide the important functions specified in paragraph 230.4-1(a)(1). Breaks in the mounds would be provided such that drainage in adjacent areas would not be impaired.
230.4-1(a)(2)	Water Column	Material would be placed to a height of four feet to minimize the area required for disposal. No water column would remain in the disposal area which is now intermittently inundated. The placement of material adjacent to the creek would result in an increase in turbidity following construction until vegetation is reestablished. The existing channel bottom is sand and silt along most of the project area, and the resultant heavy siltation does not now appear to impair the vigor of vegetation in the broad, slow-moving area below the project where most of the sediment would continue to fall out. No major impacts are anticipated in areas far downstream.
230.4-1(a)(3)	Benthos	Benthic organisms in the disposal area which are unable to move to adjacent, unaffected areas would be destroyed. The low value of this area has been described in 230.4-1(a)(1).
230.4-1(b)	CHEMICAL-BIOLOGICAL INTERACTIVE EFFECTS	
230.4-1(b)(1)	Exclusion Criteria	Material will be placed on land adjacent to the creek, which is very similar to the source of the excavated material. The material is not sufficently removed from sources of pollution to qualify under the exclusion criteria.
230.4-1(b)(2)	Water Column Effects	No water column in resultant filled area. Elutriate tests are not applicable. Because the material would be elevated above the normal water level, the potential for any pollutants entering the adjacent waters by leaching would be less than for the existing situation where these pollutants remain available in bottom sediments.
230.4-1 (b) (3)	Effect on Benthos	Chemical effects on benthos in adjacent areas, like water quality effects, would be about the same or less than with existing conditions. Trash would be cleaned from the creek bottom.
230.4-1(c)	Comparison of Sites	The disposal site is adjacent to the area from which material is to be excavated. The disposal area after use will support upland vegetation. A detailed comparison of the sites in this case would not be useful.
230.4-2	Water Quality	Water quality in the project area is generally poor in this Class C - swamp stream. No violation of water quality standards established in 40 CFR 230 or "Rules, Regulations, Classifications, and Water Quality Standards Applicable to the Surface Waters of North Carolina" can be predicted as a result of the project. Turbidity will increase during construction until vegetation is reestablished.

EVALUATION OF FACTORS INVOLVED IN THE DISCHARGE OF DREDGED OR FILL HATERIALS IN NAVIGABLE WATERS. CRITERIA FROM 40 CFR 230 (continued)

Paragraph	Criteria	Relation to Selected Plan
230.5	SELECTION OF DISPOSAL SITES	
230.5(a)	Need for the Proposed Activity	Structural modifications are required if flood control benefits in excess of costs are to be realized.
230.5(a)	Alternative Disposal Sites and Methods of Disposal	Trucking material to upland sites would require more fill due to the access required than the proposed action. Pumping of the excavated material is possible; however, special equipment would be required, and the increased costs can not be justified to protect a poor to marginal area.
230.5(b)	Degradation of Water Uses at Proposed Disposal Sites	•
230.5(b)(1)	Municipal Water Supply	No intakes are located near the proposed disposal sites.
230.5(b)(2)	Shellfish	None.
230.5(b)(3)	Fisheries	No significant fishery in the project area.
230.5(b)(4)	Wildlife	Impact not significant because of the poor to marginal habitat for limited types of wildlife.
230.5(b)(5)	Recreation	Recreation improved by greenway, trail, tables, and benches.
230.5(b)(6)	Threatened or Endangered Species	No threatened or endangered species are known to occur in the project area.
230.5(b)(7)	Benthic Life	See paragraphs 230.4-1(a)(3) and 230.4-1(b)(3). Loss to benthos not significant.
230.5(b)(8)	Wetlands	See paragraphs 230.4-1(a)(1). The proposed action is directly related to water, and will not cause a permanent unacceptable disruption to water quality uses.
230.5(b)(9)	Submerged Vegetation	Disposal is not in an area where submerged vege- tation is important to overall biological pro- ductivity.
230.5(b)(10)	Size of Disposal Site	Size held to minimum which would not result in failure of slopes or severe erosion.
230.5(c)	Other Factors Considered to Minimize Adverse Impacts	Appropriate scientific literature was consulted and various methods of disposal were considered.
230.5(d)	Contaminated Fill Material Restrictions	Polluted material placed in upland mounds would result in less release to adjacent waters than from the existing pollutants in bottom sediments.
230.5(e)	Mixing Zone	Mixing zone not applicable to disposal site which will be filled above water level.

END

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